UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
Washington, D.C. 20230

FEB 25 2010

Ms. Mindel De La Torre
Chief of the International Bureau
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Dear Ms. De La Torre:

The National Telecommunications and Information Administration (NTIA) on behalf of the Executive Branch agencies, approves the release of two draft Executive Branch proposals for WRC-12 agenda items 1.6 (Resolution 950) and 1.10.

For agenda item 1.6 (Resolution 950), NTIA proposes to modify No. 5.565 to update the list of use of 275 – 3 000 GHz by the passive services. NTIA also proposes a mobile-satellite service (Earth-to-space) allocation for Appendix 18 Channels 75 and 76 to improve satellite detection of the Automatic Identification System under agenda item 1.10.

NTIA considered the Federal agencies' input toward the development of U.S. proposals for WRC-12. NTIA forwards this package for your consideration and review by your WRC-12 Advisory Committee. Dr. Darlene Drazenovich is the primary contact from my staff.

Sincerely,

Karl B. Nebbia
Associate Administrator
Office of Spectrum Management

UNITED STATES OF AMERICA
DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda Item 1.6: to review No. **5.565** of the Radio Regulations in order to update the spectrum use by the passive services between 275 GHz and 3 000 GHz, in accordance with Resolution **950 (Rev.WRC 07)**, and to consider possible procedures for free-space optical-links, taking into account the results of ITU R studies, in accordance with Resolution **955 (WRC 07)**

Background Information: Agenda item 1.6 addresses two distinct issues. The content of this proposal addresses only the updating of No. **5.565** in accordance with Resolution **950 (Rev. WRC-07)**. The Table of Frequency Allocations establishes allocations at frequencies between 9 kHz and 275 GHz. No allocations currently exist above 275 GHz, although an entry in the Table for the range 275-1 000 GHz contains a reference to No. **5.565**.

Resolution **950 (Rev. WRC-07)** calls for a re-examination of the frequency bands contained in No. **5.565** with a view to updating this footnote, including advice on the applications suitable for the range 275-3 000 GHz. Passive services such as the Earth exploration-satellite service (EESS), space research service (SRS), and radio astronomy service (RAS) already utilize portions of the 275-3 000 GHz range for scientific observation. Some of these operations measure spectral line and continuum emissions from space while others measure atmospheric and climate-related natural emissions from the Earth and its atmosphere. Resolution **950 (Rev. WRC-07)** resolves to review No. **5.565** to update the information on spectrum use in the frequency range 275-3 000 GHz by the passive services, but specifically excludes allocations in this range.

ITU-R studies of current and projected scientific needs for passive use of the frequency range 275-3 000 GHz resulted in new recommendations and reports. These studies revealed a need to update No. **5.565** through the addition of some new bands of interest and the deletion of some existing bands. Technical factors strongly influence use of the range 275-3 000 GHz. First, the Earth's atmosphere absorbs signals at these frequencies, especially in the range 1 000-3 000 GHz where the atmosphere is nearly opaque. Second, antenna beamwidths are extremely narrow at such high frequencies.

Interference from non-geostationary satellites into terrestrial stations is highly unlikely due to the above factors and the speed of the spacecraft relative to Earth. With regard to geostationary satellites, coordination would resolve the potential interference from the unlikely scenario of transmissions with maximum antenna coupling and minimum propagation loss. As a result, passive and active services can share frequencies above 1 000 GHz without constraints.

Proposal:

ARTICLE 5
Frequency allocations

Section IV – Table of Frequency Allocations
(See No. **2.1**)

MOD USA/AI 1.6/1

5.565 A number of frequency bands in ~~T~~the ~~frequency band~~ range 275-~~1~~3 000 GHz ~~may be~~ are used by administrations for ~~experimentation with, and development of, various active and~~ passive service~~s~~ applications. In the~~is band~~ frequency range 275-1 000 GHz a need has been identified for the following frequency bands for measurements by ~~spectral line measurements for~~ passive services:

- radio astronomy service: 275-323 GHz, 327-371 GHz, 388-424 GHz, 426-442 GHz, 453-510 GHz, 623-711 GHz, 795-909 GHz and 926-945 GHz;

- Earth exploration-satellite service (passive) and space research service (passive): 275-~~277~~286 GHz, ~~294~~296-306 GHz, ~~316~~313-~~334~~356 GHz, ~~342-349 GHz, 363~~361-365 GHz, ~~371~~369-~~389~~392 GHz, 397-399 GHz, 409-411 GHz, 416-434 GHz, ~~442~~439-~~444~~467 GHz, ~~496~~477-~~506~~502 GHz, 523-527 GHz, ~~546~~538-~~568~~581 GHz, ~~624~~611-~~629~~630 GHz, 634-654 GHz, ~~659~~657-~~661~~692 GHz, ~~684-692 GHz~~713-718 GHz, ~~730~~729-~~732~~733 GHz, 750-754 GHz, 771-776 GHz, 823-846 GHz, ~~851~~850-~~853~~854 GHz, 857-862 GHz, 866-882 GHz, 905-928 GHz, ~~and~~ 951-956 GHz, 968-973 GHz and 985-990 GHz.

In the frequency range 1 000-3 000 GHz, passive services may use any band segment for ground- and space-based experimentation without constraints on any other services operating in this range.

~~Future research in this largely unexplored spectral region may yield additional spectral lines and continuum bands of interest to the passive services.~~ Administrations are urged to take all practicable steps to protect ~~these~~ passive services from harmful interference until the date when the allocation ~~T~~table is established in the ~~above-mentioned~~ 275-3 000 GHz frequency range~~band~~.

Reasons: Based on the studies performed, the list of EESS and SRS bands of interest in the range 275-1 000 GHz need to be updated in No. **5.565**. ITU-R studies have shown that unconstrained sharing between passive and active services in the frequency range 1 000-3 000 GHz is feasible; therefore passive services should have use of any band segment in this frequency range for experimentation.

SUP USA/AI 1.6/2

RESOLUTION 950 (Rev. WRC-07)
Consideration of the use of the frequencies between 275 and 3 000 GHz

Reasons: Required studies have been completed. The resolution is no longer needed.

UNITED STATES OF AMERICA
DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE

Agenda Item 1.10: to examine the frequency allocation requirements with regard to operation of safety systems for ships and ports and associated regulatory provisions, in accordance with Resolution **357 (WRC-07)**

Background Information: Modifying the Radio Regulations to reflect the satellite monitoring of Automatic Identification System (AIS) equipped vessels is critical to search and rescue, safety of navigation, and the safe movement and tracking of vessels. This proposal specifically adds a mobile-satellite service (MSS) (Earth-to-space) allocation to 156.775 MHz and 156.825 MHz (Appendix **18,** Channels 75 and 76) for improved AIS satellite detection using message 27.

This proposal satisfies the International Maritime Organization (IMO) Resolution MSC 74(69), which requires that AIS improve the safety of navigation by assisting in the efficient navigation of ships, protection of the environment, and operation of Vessel Traffic Services (VTS). Improved satellite detection of AIS will satisfy IMO functional requirements for collision avoidance, obtaining information about a ship and its cargo, and providing ship-to-shore traffic management. The ITU-R completed studies to identify VHF channels in Appendix **18** for improved AIS satellite detection and recently updated Recommendation ITU-R M.1371-3, "Technical characteristics for an automatic identification system using time division multiple access in the VHF maritime mobile band," to reflect specialized message 27 for long-range AIS broadcast messages of AIS Class A equipped vessels.

This proposed MSS (Earth-to-space) allocation for satellite AIS is compatible with the existing navigation-related communications of the frequencies as designated in Appendix **18**, note *n)*. ITU-R Report M.[SAT-AIS], "Improved satellite detection of AIS," and the recently updated ITU-R Recommendation M.1371-3, confirm the compatibility and show that the transmission of new AIS message 27 contains navigational information including position, speed over ground, course over ground, navigational status. The proposed MSS (Earth-to-space) frequencies (channels 75 and 76) are for navigation and serve as guard-bands for channel 16 - the safety and distress frequency. Precautions to avoid harmful interference to channel 16 are achievable by prohibiting message 27 transmissions within 40 nautical miles of coast stations. Therefore, the new proposed footnote *r)* is fully compliant with footnote *n)* in Appendix **18**.

Proposal:

ARTICLE 5

Section IV – Table of Frequency Allocations
(See No. **2.1**)

MOD USA/AI 1.10/1

148-223 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
156.7625-156.8375	MARITIME MOBILE (distress and calling) 5.111 5.226 ADD 5.XYZ	

Reasons: Proposed changes reflect the allocation of 156.7625-156.8375 MHz to the required services in Article 5 to support maritime safety and vessel tracking requirements.

ADD USA/AI 1.10/2

5.XYZ *Additional allocation:* the bands 156.775 MHz and 156.825 MHz are also allocated to the Mobile-Satellite Service (Earth-to-space) for the reception of automatic identification system (AIS) emissions, using solely message 27 as specified in Recommendation ITU-R M.1371, from stations operating in the maritime-mobile service (see Appendix **18**).

Reasons: Proposed changes reflect the allocation of 156.775MHz and 156.825 MHz to the required services in Article 5 to support maritime safety and vessel tracking requirements.

MOD USA/AI 1.10/3

APPENDIX 18 (Rev. WRC-12~~07~~)
Table of transmitting frequencies in the VHF maritime mobile band

(See Article **52**)

NOTE A – For assistance in understanding the Table, see Notes *a)* to *q)* below. (WRC-07)

NOTE B – The Table below defines the channel numbering for maritime VHF communications based on 25 kHz channel spacing and use of several duplex channels, but also allows the use of 12.5 kHz channel spacing. The channel numbering for 12.5 kHz channels and the conversion of two-frequency channels for single-frequency operation shall be in accordance with Recommendation ITU-R M.1084-4 Annex 4, Tables 1 and 3. (WRC-07)

Channel designator	**Notes**	**Transmitting frequencies (MHz)**		**Inter-ship**	**Port operations and ship movement**		**Public corres-pondence**
		From ship stations	**From coast stations**		**Single frequency**	**Two frequency**	
60	*m), o)*	156.025	160.625			X	x

01	*m), o)*	156.050	160.650			X	x
61	*m), o)*	156.075	160.675		x	X	x
02	*m), o)*	156.100	160.700		x	X	x
62	*m), o)*	156.125	160.725		x	X	x
03	*m), o)*	156.150	160.750		x	X	x
63	*m), o)*	156.175	160.775		x	X	x
04	*m), o)*	156.200	160.800		x	X	x
64	*m), o)*	156.225	160.825		x	X	x
05	*m), o)*	156.250	160.850		x	X	x
65	*m), o)*	156.275	160.875		x	X	x
06	*f)*	156.300		X			
66	*m), o)*	156.325	160.925			X	x
07	*m), o)*	156.350	160.950			X	x
67	*h)*	156.375	156.375	X	x		
08		156.400		X			
68		156.425	156.425		x		
09	*i)*	156.450	156.450	X	x		
69		156.475	156.475	X	x		
10	*h), q)*	156.500	156.500	X	x		
70	*f), j)*	156.525	156.525	Digital selective calling for distress, safety and calling			
11	*q)*	156.550	156.550		x		
71		156.575	156.575		x		
12		156.600	156.600		x		
72	*i)*	156.625		X			
13	*k)*	156.650	156.650	X	x		
73	*h), i)*	156.675	156.675	X	x		
14		156.700	156.700		x		
74		156.725	156.725		x		

Channel designator	Notes	Transmitting frequencies (MHz)		Inter-ship	Port operations and ship movement		Public corres-pondence
		From ship stations	From coast stations		Single frequency	Two frequency	
15	*g)*	156.750	156.750	X	x		
75	*n) r)*	156.775	156.775		x		
16	*f)*	156.800	156.800	DISTRESS, SAFETY AND CALLING			
76	*n) r)*	156.825	156.825		x		
17	*g)*	156.850	156.850	X	x		
77		156.875		X			
18	*m)*	156.900	161.500		x	X	x
78	*m)*	156.925	161.525			X	x
19	*m)*	156.950	161.550			X	x
79	*m)*	156.975	161.575			X	x
20	*m)*	157.000	161.600			X	x
80	*m)*	157.025	161.625			X	x
21	*m)*	157.050	161.650			X	x
81	*m)*	157.075	161.675			X	x
22	*m)*	157.100	161.700		x	X	x
82	*m), o)*	157.125	161.725		x	X	x
23	*m), o)*	157.150	161.750		x	X	x
83	*m), o)*	157.175	161.775		x	X	x
24	*m), o)*	157.200	161.800		x	X	x
84	*m), o)*	157.225	161.825		x	X	x
25	*m), o)*	157.250	161.850		x	X	x

85	*m), o)*	157.275	161.875		x	X	x
26	*m), o)*	157.300	161.900		x	X	x
86	*m), o)*	157.325	161.925		x	X	x
27		157.350	161.950			X	x
87		157.375	157.375		x		
28		157.400	162.000			X	x
88		157.425	157.425		x		
AIS 1	*f), l), p)*	161.975	161.975				
AIS 2	*f), l), p)*	162.025	162.025				

Reasons: Proposed changes reflect the allocation of 156.775 MHz and 156.875 MHz to the required services in RR Appendix 18 to support maritime safety and vessel tracking requirements.

Notes referring to the Table

General notes

ADD USA/AI 1.10/4

r) Channels 75 and 76 are allocated to the mobile-satellite service (Earth-to-space) for the transmission of AIS message 27 from ships as defined in Recommendation ITU-R M.1371.

Reasons: Proposed footnote reflects the allocation of 156.775 MHz and 156.875 MHz to the required services in Appendix 18 to support maritime safety and vessel tracking requirements.